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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/628,026

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Xin Simon Luo

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EXAMINER

BELLO, AGUSTIN

ART UNIT

PAPER NUMBER

2613

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
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3 MONTHS

04/05/2007

PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

**Office Action Summary**

Application No.

10/628,026

Applicant(s)

LUO ET AL.

Examiner

Agustin Bello

Art Unit

2613

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 03 January 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-25 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)                                | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1-6, 8-10, 12, 14-20, and 22-25 are rejected under 35 U.S.C. 102(b) as being anticipated by Althaus (U.S. Patent No. 6,097,521).

Regarding claims 1, 12, 15, Althaus teaches an optical communication device, comprising: a laser diode (reference numeral 2 in Figure 1) for emitting an optical transmission beam; a reflective mirror (reference numeral 14 in Figure 1) adapted to reflect a first portion of the optical transmission beam to an end face of an optical fiber (reference numeral 9 in Figure 1); and a monitor photodetector (reference numeral 21 in Figure 1), having a light receiving facet (reference numeral 23 in Figure 1) adapted to receive a second portion of the optical transmission beam, the monitor photodetector being configured such that the second portion of the optical transmission beam enters the light receiving facet of the monitor photodetector to be applied at a light detection area (reference numeral 45, 46 in Figure 1) adjacent another facet of the monitor photodetector, the monitor photodetector being adapted to produce a control signal as a function of the received second portion of the optical transmission beam (column 5 lines 30-32; column 7 lines 4-11) .

Art Unit: 2613

Regarding claims 2, 14, 16, Althaus teaches a focusing lens (reference numeral 8 in Figure 1) optically coupled to the reflective mirror for focusing the reflected optical beam into the end face of the optical fiber.

Regarding claims 3, 17, Althaus teaches that the laser diode comprises an edge emitting laser (reference numeral 2 in Figure 1).

Regarding claims 4, 18, Althaus teaches that the laser diode and the reflective mirror are coupled to a TO header (reference numeral 32 in Figure 1), and wherein the reflective mirror is swept at an angle (reference numeral 16 in Figure 1) to reflect the first portion of the optical transmission beam to the optical fiber.

Regarding claims 5, 19, Althaus teaches that the reflective mirror is swept an angle in the range of about 43-47 degrees relative to the TO header (e.g. 45° in Figure 1).

Regarding claims 6, 20, Althaus teaches that the light receiving facet of the monitor photodetector is swept at an angle relative to the TO header (e.g. 90° in Figure 1).

Regarding claims 8, 22, Althaus teaches a laser diode isolator (reference numeral 34, 47 in Figure ) disposed between the focusing lens (reference numeral 30, 8 in Figure 3) and the optical fiber (reference numeral 9 in Figure 3).

Regarding claims 9, 23, Althaus inherently teaches that the monitor photodetector comprises a p-i-n photodetector.

Regarding claims 10, 24, Althaus teaches that the monitor photodetector (reference numeral 21 in Figure 1) is coupled to the reflective mirror (reference numeral 14 in Figure 1).

Regarding claim 25, Althaus teaches that the monitor photodetector is configured to receive the second portion of the optical transmission beam directly from the laser diode (as seen in Figure 1).

***Claim Rejections - 35 USC § 103***

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 7, 13, and 21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus in view of Inoue (U.S. Patent No. 6,975,813).

Regarding claims 7, 13, and 21, Althaus differs from the claimed invention in that Althaus fails to specifically teach a gain stage coupled to the monitor photodetector and adapted to convert the control signal to a voltage proportional to the intensity of the optical transmission beam and a control adapted to compare the voltage to a reference voltage and to adjust drive current of the laser diode in accordance with the comparison. However, Inoue teaches that such a configuration is well known in the art (column 1 lines 35-49). One skilled in the art would have been motivated to include this type of configuration in the device of Althaus in order to control the light output at a constant value with respect to a reference value (column 1 lines 47-49 in Inoue). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include, as taught by Inoue, a gain stage coupled to the monitor

Art Unit: 2613

photodetector and adapted to convert the control signal to a voltage proportional to the intensity of the optical transmission beam and a control adapted to compare the voltage to a reference voltage and to adjust drive current of the laser diode in accordance with the comparison in the device of Althaus.

Regarding claim

5. Claim 11 is rejected under 35 U.S.C. 103(a) as being unpatentable over Althaus.

Regarding claim 11, Althaus differs from the claimed invention in that Althaus fails to specifically teach that the reflective mirror comprises a silicon reflective mirror. However, silicon reflective mirrors are well known in the art and Official Notice is given to that effect. Furthermore, applicant's specification indicates that the reflective mirror can be comprised of any suitable reflective material, of which Althaus' mirror is surely comprised. Therefore, it would have been obvious to one skilled in the art at the time the invention was made to include a mirror comprised of silicon material in the device of Althaus or to use the mirror material used by Althaus as an alternative to the claimed silicon mirror.

#### *Response to Arguments*

6. Applicant's arguments with respect to claims 1-25 have been considered but are moot in view of the new ground(s) of rejection.

#### *Conclusion*

7. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

Art Unit: 2613

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Agustin Bello whose telephone number is (571) 272-3026. The examiner can normally be reached on M-F 8:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jason Chan can be reached on (571)272-3022. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Art Unit: 2613

A handwritten signature in black ink, reading "A. Bello". The signature is written in a cursive style with a large, stylized "A" and "B".

Agustin Bello  
Primary Examiner  
Art Unit 2613

AB